'Talk to me baby, tell me what's the matter now'

Semiotic and developmental perspectives on communication in psychoanalytic infant treatment

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Infants suffer to a considerable degree from disturbances in nursing, sleep, mood, and attachment. Psychotherapeutic methods are increasingly used to help them. According to case reports, psychoanalytic work with infants and mothers has shown deep-reaching and often surprisingly rapid results, both in symptom reduction and in improved relations between mother and child. The clinical urgency of the method makes it important to study its results and theoretical underpinnings. Among the theoretical issues often raised in discussions on this modified form of psychoanalysis, those addressing the nature of communication between analyst, baby, and the mother are the most frequent. For example, how and what does an infant understand when the analyst interprets to her? What does the analyst understand of the infant's communication? These issues are addressed by investigating the infant's tools for understanding linguistic and emotional communication, and by providing a semiotic framework for describing the communication between the three participants in the analytic setting. The paper also investigates problems with the traditional ways of using the concept of symbolization within psychoanalytic theory. The theoretical investigation is illustrated by two brief vignettes from psychoanalytic work with an 8 month-old girl and her mother.

Keywords: psychoanalysis of infants and mothers, nonverbal communication, emotional communication, semiotics, symbolization, infant psychotherapy, infant development

Long gone blues

Talk to me baby, tell me what's the matter now (*repeat*) Are you tryin' to quit me, baby, but you don't know how?

I've been your slave, ever since I've been your babe (*repeat*) But before I see you go, I see you in your grave.

I'm a good gal, but my love is all wrong (repeat)
I'm a real good gal, but my love is gone.
(Billie Holiday)

'Talk to me baby, tell me what's the matter now.' The entreating words summarize how the mother of 8 month-old Karen¹ felt in the face of her incessant crying and

^{&#}x27;Names and biographical data of the baby and her mother have been changed to protect anonymity.

demand for the breast. Like the two lovers in the blues, they seemed to be slaves to each other, desperately trying to understand what had gone wrong between them. Today, many mothers seek psychotherapy with their infants. All therapy methods relate the baby's disturbance to a derailed interaction with the mother (Baradon, 2002; Baradon et al., 2005; Barrows, 2003; Berlin, 2002; Cramer and Palacio Espasa, 1993; Dolto, 1982, 1985, 1994; Fraiberg, 1987; Lieberman et al., 2000; Manzano et al., 1999; Stern, 1998; Watillon, 1993). One of them stands out in its focus on the baby. Here, the analyst contains the infant's anxieties by describing *to the infant* her behaviour and its unconscious roots. This method, psychoanalytic work with infants (Norman, 2001, 2004), in which the analyst interprets verbally to the baby, was the one I used when treating Karen and her mother.

I argue that Karen could communicate to me many of her unresolved intrapsychic and interpersonal conflicts, such as her anger and difficulties in negotiating it with her mother. Truly, she did not respond to my interpretations by telling me 'what's the matter now'. But her ability to express herself to me and to understand my communication was so well developed that the blues title sprang to my mind as an apt metaphor for this form of psychoanalytic work. 'Talk to me baby' thus denotes the analyst's consistent way of speaking to the infant about her inner world.

There are, however, many questions as to how the infant tells the analyst 'what's the matter', and how he/she understands infant 'talk'. These questions can be framed as follows:

- 'In your method, the analyst speaks to the infant in interpretative work. How do you know that the infant understands what you say to her?'
- 'If she understands you, what does she understand?'
- 'Given the infant understands other aspects of your communication than the verbal, what are these aspects and how do you know that you two understand the same thing?'
- 'Couldn't the infant's behaviour simply be unspecific and uninterpretable reactions to your presence?'
- To sum up: 'Does the infant really understand what you convey to her and do you understand what she conveys to you?'

To approach these questions, we need to tackle two tasks. First, we need to find a theoretical framework for the communication between analyst and infant. I demonstrate that the concept of symbol is used in an unclear way in psychoanalytic theory and that it serves us badly as an explanatory tool for communication in infant work. Instead, I will explicate the interchange between infant, analyst and mother in semiotic terms, and I will label the different parts of this framework.

Second, we need to account for how and when the infant develops her perceptual and cognitive communicative capacities. I describe this in terms of findings from developmental psychological research.

I use semiotics and developmental research as assistant disciplines for explicating the questions. One could argue that these disciplines are irrelevant to an analyst because in clinical practice he/she relies on countertransferential experiences. Certainly, countertransference is vital for the analyst's understanding. In infant

work, our emotional reactions are, moreover, often very intense. But, since analyst and baby communicate in such different modes, the cues with which she provides the analyst are seldom easy to understand. The analyst needs more information than what countertransference yields for understanding the clinical situation. Knowledge of investigations of the baby's communicative abilities will help us meet the criticism that we exaggerate what can be interpreted and what the baby understands of it. In this paper, I aim to account for these investigations and link them with a theoretical framework of analyst—infant—mother communication. The two vignettes with Karen are presented to illustrate the theoretical discussion.

A comment on definitions: the term 'communication' shall denote any way of conveying meaning from one person to another. I will let 'language' denote the 'remarkably complex, flexible and powerful *system* for communication that involves the creative use of words according to the rules of a systematic grammar' (Bear et al., 2001, p. 638). A linguistic utterance is paralleled by gesture, tone, rhythm, etc. and I shall specify when I refer to its verbal or non-verbal content.

Psychoanalytic work with infants and mothers

The clinical method was developed by Johan Norman (2001, 2004) and is now practised at the Psychoanalytic Infant Reception Service in Stockholm. It proceeds from four assumptions:

(1) that a relationship can be established between the infant and the analyst, (2) that the infant has a primordial subjectivity and self as a base for intersubjectivity and the search for containment, (3) that the infant has an unique flexibility in changing representations of itself and others that comes to an end as the ego develops, and (4) that the infant is able to process aspects of language. (2001, p. 83)

The treatment aims at bringing 'the disturbance in the infant into the emotional exchange of the here-and-now of the session, making it available for containment in the infant—mother relationship' (2001, p. 83). Mother *and* baby are regarded as active participants who relate to the analyst. In this respect, the method draws from Winnicott who thought the 'fluidity of the infant's personality and the fact that feelings and unconscious processes are so close to the early stages of babyhood' (1941, p. 232) could be used therapeutically. However, Winnicott said it was essentially from the study of adult transference that we could 'gain a clear view of what takes place in infancy itself' (1960, p. 595). Norman radicalizes Winnicott's notion of infantile fantasies 'full of content and rich in emotion' (1941, p. 61) into a technique in which the analyst talks to *the infant* to contain and interpret her unconscious mental content.

The problem is that infants cannot speak and understand very dimly, if at all, the analyst's words. Not until 12 months will they understand some 10 words, and they begin producing their 'first recognizable words between roughly twelve and twenty months' (Karmiloff and Karmiloff-Smith, 2001, p. 62). This developmental skew between language understanding and expression Balkányi (1964) used to explain why children faced with a trauma they cannot verbalize yet run into turmoil. To Norman, the infant's problem is not so much that she cannot verbalize the trauma but

that it has not been contained. The mother might have said soothing words but at the same time emitted unconscious messages with different meanings. Since the infant 'understands the unconscious communication made to her' (Dolto, 1994, p. 177)² she is presented with a bewildering situation. The analyst's interpretations aim at containing this traumatic situation. The question is what the infant understands of them. I will soon return to this point.

As for infantile defence mechanisms, Norman speaks of two types; infantile repression and splitting + projective identification (2004, p. 1118). When a mother communicates via intrusive projective identifications, her verbal and non-verbal messages will diverge, as when a depressed mother projects her sinister worldview, smiles faintly but is too absorbed or hostile to contain the distress that her projections evoke.³ Either the baby will displace her negative affects on to a concrete thing such as mother's blouse or body (infantile repression), or she will reject the painful situation altogether and ward off every link with mother (splitting + projective identification).

Treatments are kept at a frequency of four sessions a week whenever possible. They run from a few months for babies under one year to longer analyses with children around 18 months, when they assume many characteristics of classical child psychoanalysis. The infants suffer mainly from disturbances of sleep, nursing, mood and contact. They cannot fall asleep or they wake up from seeming nightmares. They reject the breast or cling to it desperately. They avoid contact with mother or cannot let go of her. Some babies have additional disorders: colic, allergies, and eczema. In some, a diagnosed somatic disease has contributed to disrupting the emotional link between mother and child. It is as if neither dared attach to the other. Both parties suffer intensely, and witnessing their torment is often heartbreaking to the analyst.

To state that a baby reacts when mother's conscious and unconscious messages diverge is not controversial to an analyst. However, to state the reverse, that the baby transmits incongruent messages and that the analyst had better talk to her about these situations, is. I now lay out the theoretical justification for this technique and account for research findings on the infant's ability to understand verbal and emotional communication, respectively. I use two brief vignettes.

Case vignette 1

Karen is 8 months old. She demands nursing continuously and has severe sleeping problems. It is impossible to get her to sleep unless mother yields to her demand for the breast. Any mishap makes Karen cry and her mother is exhausted and helpless. The three of us worked in a 2 month psychoanalysis of four sessions a week.

²There is one crucial difference between Norman and Dolto on the infant's ability to understand unconscious communication; Dolto attributed a capacity in the infant to understand words literally (see e.g. 1985, p. 211). Norman and our group do not share this position, as argued below on the infant's understanding of language.

³In research experiments, Tronick and Weinberg (1997) and Field with her colleagues (1988) have shown similar intense infant reactions during interaction with their depressed mothers.

In the first session, mother tells of her former worries about Karen's somatic health. She knows that, from a medical point of view, it was not serious. She is distressed, though, but her feeling contrasts with her light tone of voice. She seems unwilling to let in my suggestion that it must have been hard for her and not only for Karen. I feel she blurs their identities, substituting 'we' for either of them. If I am right that she fears her own affects about Karen's health, she cannot contain Karen's affects. I ponder whether Karen's whining for the breast is related to her mother's way of handling this affective situation. While mother speaks and I reflect on my countertransference feelings of our artificial contact, Karen whines and starts crawling. She tumbles at a little stool in my room and starts to cry. I say, 'Now you fell'.

Mother says, 'Oh dear! You fell and hurt your head'.

I tell Karen, 'Well, actually you look *angry*⁴ when you're looking at me. You might wonder what kind of man you have come to, with his stupid stool ... Yes? ... But it wasn't that dangerous.'

Karen calms down but whimpers still. Meanwhile, mother describes how Karen wakes up during the night and then only the breast will soothe her. She continues, as if telling Karen, 'When you wake up during the night, the *only* thing that helps is to get the breast at *once*, otherwise you become *So Sad*.'

I get the impression Karen is annoyed, however. I say to her, 'One could ask oneself: do you get *sad* because you don't get the breast? Or, do you get *Angry*?!'

Karen roars and I comment, 'Well, *that* does sound quite *angry*, I think!' Karen stops crying.

This is a common situation in infant psychoanalytic work. The emotional climate between mother and infant gets hotter. I am drawn into the process via my counter-transference and the way the two relate to me; Karen by glaring at me and the mother by conveying her need for help while covering it up. I describe what I experience and, finally, I interpret to Karen that she seems angry with me.

What entitles me to attribute such significance to Karen's communication? We are reminded of our initial questions. To frame them differently: Karen doesn't say she is angry with me. She roars. How does she convey her affect to me? Which concepts best account for her communication? Traditionally, when psychoanalysts feel the patient conveys a meaning beyond the obvious, we say she *symbolizes* this other meaning. Karen's roar would thus symbolize her anger with me. On second thoughts, however, we note that the concept of 'symbol' is used in so many ways to convey meaning. We could, for example, use 'symbol' for an infant's roar, a manifest dream content, a symptom, or a work of art. This would challenge us to clarify in each case how we use 'symbol' and 'symbolization'. This is not always done clearly in psychoanalytic theorizing. We need to go into the problems with the concepts of 'symbol' and 'symbolization'.

Problems with the concepts of 'symbol' and 'symbolization'

According to Silver, symbols are 'instruments of expressing our feelings to one another as well as being the instruments of meaning and understanding' (1981,

⁴In this vignette, italic characters and capital letters indicate emphasis of words.

p. 271). The psychoanalytic situation is indeed loaded with such feeling expressions and our efforts to understand them. Accordingly, 'symbol' is a concept commonly used in psychoanalytic theory. Yet, we do not always make it clear what we mean by it. This is even more regrettable in infant work, since the little patient's communication is so abstruse and hard to interpret. We need a better conceptual apparatus for how analyst and analysand convey conscious or unconscious meanings.

Colloquially, the psychoanalytical symbol implies 'constancy of the relationship between the symbol and what it symbolizes in the unconscious' (Laplanche and Pontalis, 1973, p. 442). As the jargon goes, a cigar always means a penis. The symbol is formed on an analogy with the symbolized (Gibello, 1989, p. 37), it will revolve around bodily functions and existential issues, and it will not evoke associations (Jones, 1916). This contrasts with Freud's broader original definition. Here, *any* substitutive formation is symbolic. The condition of a constant connection *Cs–Ucs* has been dropped, and the symbol is now a general semiotic entity. We could call this Freud's semiotic definition of symbolization, in which 'the deciphering of the unconscious is analogous to the one of a foreign language' (Anzieu, 1989, p. 10).

While the two definitions have been used interchangeably, a third one has slipped into clinical discussions. Statements like 'The patient has difficulties in symbolizing' imply that her words are blunt and incomprehensible, convey her affects vaguely, or that she understands interpretations concretely. This definition focuses on the formal qualities of an expression, its degree of comprehensibility, and the subject's communicative intent.

A fourth definition was introduced by Lacan, who radicalized Freud's semiotic definition of symbolization. He said that the unconscious is structured like a language since it uses linguistic mechanisms to express itself; condensation is analogous to metaphor and displacement to metonymy (1966, p. 508). His emphasis on words as the primary instrument of symbolizing unconscious meaning tended to overshadow other expressive modes. In his later writings, though, he introduced the concept of *la lalangue*, infant babbling. *Lalangue* supports the language structure of the unconscious by articulating affects, which remain enigmatic to the individual. It 'articulates things which go much further than the speaking individual bears knowing that he has expressed' (1975, p. 175). The problem with using it as a tool for explicating phenomena in infant work is that Lacan used *la lalangue* more as a metapsychological concept, and did not investigate it in infant clinical practice or research.

When Lacan defines language as part of *le symbolique*, one of three orders together with the imaginary and the real, 'the structure of the symbolic system ... [becomes] the main consideration, while the links with what is being symbolised ... are secondary' (Laplanche and Pontalis, 1973, p. 440). The *symbolique* system is governed by linguistic principles, which bars from it 'expressions of affects, the investment of aesthetic objects, the representation and organization of images' (Arfouilloux, 2000, p. 25). Since affective expressions are typical for the infant, *le symbolique* depends too heavily on a linguistic definition to make room for infants' crying and grimacing.

Let us now investigate if any of these four definitions of 'symbol' will help us to explicate Karen's roar. Along the first-mentioned, classical definition, the roar would constantly signify one unconscious X. This seems counterintuitive; a roar can signify many things and Karen seems conscious of her anger. According to the second, semiotic definition, the roar would symbolize Karen's defensive conflict. But, since her roar openly expresses an affect, it becomes unclear what is defensive about it. Designating Karen's roar along the third definition, that 'she has difficulties in symbolizing', goes without saying but leaves us with the question: when is a roar complex enough to merit being called a symbol? Finally, to state that the roar belongs to the order of *le symbolique* would be incorrect, since this order obeys linguistic laws and a roar is not a linguistic expression.

If we could liberate the definition of *le symbolique* from its tie to linguistics, we might find tools for designating Karen's roar. Guy Rosolato (1978, 1985), who assumes this task, divides language into two dimensions: digital and analogical.⁵ While Lacan focused on the first, which views speech as discrete units assembling in obedience to linguistic laws, Rosolato brought up the analogical dimension: non-verbal aspects of tone, intensity, and other nuances parallel to the word stream. I can grasp Karen's roar in its analogous dimension; it 'copies' her anger, and the copy corresponds to my representation of anger because it has certain characteristics, for example, a sound or a grimace. Beebe and Lachmann conclude, 'As mother and infant match each other's temporal and affective patterns, each recreates in herself a psychophysiological state similar to that of the partner, thus participating in the subjective state of the other' (2002, p. 109). This is how Karen and I participate in each other's subjective states. Our participation is bidirectional. I have noted in myself spontaneous mimic expressions that are analogous with what I feel and with what I imagine the infant feels.

Obviously, the meaning of an analogous representation is not immediately given to the receiver. How do infant and mother understand each other's emotional communication? Someone must provide a code that links the content to its expressive form. The infant must have an object to clarify the meaning. Here, Melanie Klein's work becomes indispensable since she focused on the object's role in the symbolization process. She understood children's play to symbolically express their struggle with internal and external objects, and by offering herself to be their interpreting object in the transference (Klein, 1924, 1930, 1931). Segal (1957, 1991) continued Klein's work by providing a theoretical framework for the object's role in symbolization. To her, the subject's relation with the internal object will govern her use and understanding of symbolization. In the most elaborated level, symbolic representation, typical of the depressive position, the object's separateness is recognized. It is a 'tripartite relationship: the symbol, the object it symbolizes and the person for whom the symbol is the symbol of the object' (1991, p. 38). In a symbolic equation, however, a part of the ego identifies with the object and is confused with it. The symbol becomes cruder and harder to understand.

However, since the infant's internal object relation is so difficult to ascertain, and since Segal exemplifies with more advanced symbol forms than infant expressions, it is not easy to apply her concepts to Karen's roar. It could hardly be a symbolic equation since Karen conveyed anything but a muddled border between us. Symbol

⁵The distinction digital/analogical semiosis is also used by Eco (1968).

would be a better candidate, but it does not differentiate the roar from a verbal account of my wrongdoings.

To bypass problems with the symbolization concept, I suggest we conceptualize infant expressions, from kicking, smiling, crying, cooing, all the way to words, with one general term. It should be unburdened by dichotomies like conscious/unconscious content, verbal/non-verbal expression, and separate/fused object. Out of this concept should branch a terminology that covers significations on different levels of consciousness, complexity, and object status. I suggest using the term *sign*; Karen's roar is a sign of her affect at whichever level it is signified. Defining that level comes at a second step. We must first define what a sign is.

'What is a sign?'

'This is a most necessary question, since all reasoning is an interpretation of signs of some kind' (Peirce, 1998, p. 4). C. S. Peirce set aside one general term for invoking meaning, irrespective of the level of signification: the sign. Out of this term branches a multitude of sign types of which 'symbol' is but one.

A *sign* is a thing, which serves to convey knowledge of some other thing, which it is said to *stand for* or *represent*. This thing is called the *object* of the sign; the idea in the mind that the sign excites, which is a mental sign of the same object, is called an *interpretant* of the sign. (p. 13)

In order to perceive something as a sign, the mind sorts the experience into one of three universal categories: Firstness, Secondness and Thirdness. Firstness is an immediate experience unrelated to other experiences. 'Assert it and it has already lost its characteristic innocence' (Peirce, 1992, p. 248). Secondness is always related to other experiences. One experience stands against or is compared to another. Thirdness applies to perceptions of laws, conventions and regularities. Peirce's theory thus makes room for all human experiencing, from its crudest to its most elaborated forms.

These experiential categories can be signified in essentially three ways; as icons, indices and symbols. If my impression of Karen's anger was a Firstness experience of 'Angry Face', I experienced it as an *icon* of anger. Icons 'convey ideas of the things they represent simply by imitating them' (Peirce, 1998, p. 5). It is fit to become an 'image of its object' (p. 273). If I compared Karen's face to faces in other situations, it would be an *index* of anger. I placed my experience in a context of dynamic interaction; her face called on me to react. An index 'stands for its object by virtue of a real connection with it, or because it forces the mind to attend to that object' (p. 14). Finally, my words to Karen 'That does sound quite angry!' were *symbols*. They were 'associated with their meanings by usage. Such are most words, and phrases...' (p. 5). 'A symbol is a sign which refers to the Object that it denotes by virtue of a law ... which operates to cause the Symbol to be interpreted as referring to that Object' (p. 292).

Signs are our building blocks for thinking; 'we think only in signs' (p. 10). Since 'it is almost impossible to assign a period at which children do not already exhibit

Peirce later expanded this terminology into a multitude of sign types, which I will not account for here.

decided intellectual activity' (Peirce, 1992, p. 19), we are entitled to apply Peircean signs to infant thinking. This is clear also from his examples of what signs refer to: anything from colour spots and images to complicated verbal relations.

Signs do not cover their referents in a fixed way; it is not always the case that X = icon or Y = index. A sign does not constantly refer to one unconscious content. Karen's cry is not automatically a sign of sadness. Any sign can be interpreted on all three levels; as icon, index and symbol. Interpreted as word symbols, 'That sounds angry!' describes a feeling state in Karen. This does not preclude Karen, however, from interpreting them on an icon level, e.g. as 'Friendly Man'.

Semiosis, the attribution of meaning, goes on endlessly. My immediate interpretant, i.e. my thinking about what Karen's roar signified, was emotional. I felt she was angry. Having made her anger clear to me, I thought of it as opposed to someone friendly, and I felt affected by her anger. Finally, I could ask myself what I mean by 'angry', constructing a logical interpretant. This idea, in its turn, could function as an emotional interpretant in a new train of thoughts. The semiotic process can be described as an infinite series of triangles where one corner hitches on a corner in the next triangle of interpretant, object and sign. Figure 1 is adapted from Sheriff (1994, p. 35).

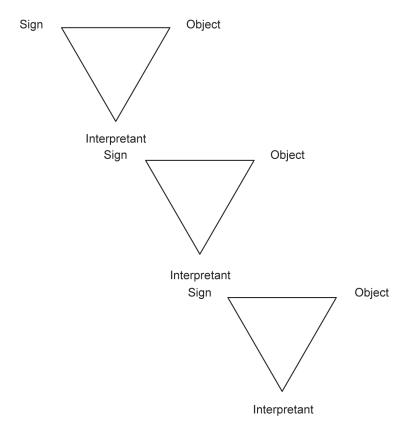


Figure 1

The triangle places the sign in a chain of infinite meanings. Iconical, indexical and symbolical meanings mingle in a continuous associative chain, which has no fixed anchoring point. Not even icons, the most primitive sign form, can be used as a semiotic linchpin. They might seem identical to that which they represent but, actually, 'they do not own any of the characteristics of the depicted object but transcribe according to a *code* some of the conditions of the experience' (Eco, 1971, p. 208). I used my personal code when I experienced Karen's angry face. She looked like other angry people I have met. But, to Karen's mother, it was an icon of a sad baby.

'Does the infant really understand what you convey to her and do you understand what she conveys to you?' If I need a code to interpret Karen, the answer seems to be negative, since I know so little of what she understands and of her tools for perceiving my words. Infant communication would just seem impossible to understand! We will find our way out, however, by investigating the role of the object that interacts with the infant. Several models of the intersubjective process of meaning-making exist (e.g. Beebe and Lachmann, 2002; Stern, 1985; Trevarthen and Aitken, 2001; Tronick, 2005). Muller's (1996) account of how the baby develops her semiotic capacities with mother has the advantage of integrating psychoanalytic theory with research on mother—infant interaction and with Peirce's concepts of signification.

The semiotic process—mother and child, analyst and analysand

'The profound gaze of the infant is also an utterance. His happy or worried agitation when undressed is also an information. The cry, with its modalities of appeal or suffering, is a sign that speaks to the mother' (Lebovici and Stoléru, 2003, p. 254). Muller (1996) describes how infant and mother come to understand each other's utterances and cries and develop their semiotic capacities. Through mutual mirroring with the mother, the baby forms representations of icons and responds; Mom frowns and she frowns. Later, indexical signs come to the fore. Mom frowns and the baby understands that she feels something about her. She feels affected and responds. Finally, mother and child take part in a traffic of word symbols.

How does the infant make meaning out of all the expressions, including the verbal expressions, that she meets with? How do they become 'acts of meaning' (Bruner, 1990)? Bruner suggests we enter language via 'prelinguistic "readinesses for meaning" ... certain classes of meaning to which human beings are innately tuned and for which they actively search' (1990, p. 72). They exist as 'protolinguistic representations' (p. 72), which are structured like narratives. He suggests that they 'serve as early interpretants for "logical" propositions before the child has the mental equipment to handle them by such later-developing calculi as adult humans can muster' (p. 80). Our dialogues in the session are thus little unfolding stories. 'Once there was a little girl. Then she stumbled on a stool and roared ...'

But is it meaningful to label such infant behaviour narrative? Hadn't we better reserve narration for language? Langer challenges the notion that only language can possess the 'character of symbolic expressiveness' (1942, p. 86). The idea that we can understand only what is expressed in discursive, i.e. linguistic, form is based on

two misunderstandings; '1/ that language is the only means of articulating thought, and 2/ that everything which is not speakable thought is feeling' (p. 87). 'There are things which do not fit the grammatical scheme of expression ... matters which require to be conceived through some symbolistic schema other than discursive language' (p. 88). Langer exemplifies this other symbolism by images, ritual, magic, dance, and music (1942, 1972). I suggest Karen's mother and I understand her expressions as forms of 'presentational symbolism', to use Langer's term. We understand Karen similarly to how we would understand an image or a dance. Our impressions form a total, immediate experience of a 'wordless symbolism, which is non-discursive and untranslatable, does not allow of definitions within its own system, and cannot directly convey generalities' (1942, p. 97).

In every step of this interactive understanding of meaning, an object must help the baby climb the semiotic ladder. This object is external at first but continuously internalized. A baby listens to her mother, who has discerned 'a state of mind in her infant before the infant can be conscious of it, as, for example, when the baby shows signs of needing food before it is properly aware of it' (Bion, 1962, p. 34): 'What is the trouble my dear, are you hungry?' The baby calms down when she understands mother's message as icons or indices from a containing object. Containment is thus a semiotic process in which the mother or analyst translates the infant's communications. The mother interprets an icon 'Hungry Baby' and an index 'Feed Me!' Her emotions and understanding of the baby's communications are, in their turn, conveyed as signs to the baby. Meaning is not clarified in an unequivocal and clear manner. Rather, 'meaning is made out of messiness' (Tronick, 2005, p. 311) because the 'meaning-making systems' (p. 308) of infants and adults are so different. We need infant research and clinical psychoanalysis to chart how containment comes about. It does not take place in an 'ether medium', as Stern (1998, p. 42) wryly remarks against formulations that do not clarify through which kind of interactive behaviour containment comes about.

In psychoanalysis, a derailed mother—baby semiotic development can assume new directions because the analyst adds new translations, as when I said, 'Karen, that does sound quite angry'. The semiotic model alerts the analyst to check what kind of semiotic partner he/she is to the baby and mother right now. Let me exemplify with a second vignette.

Case vignette 2

In the second session, the mother criticizes Karen's father in a pleading way.

Karen whines, once cooing 'Maeh-Maeh'. [Unclear icon: Sad Face + indexical request: Treat Me Like A Poor Creature + possibly an effort at forming a word symbol 'Mama'.]

Analyst: Yes ...? [Symbol-question: What Do You Mean? + encouraging index: Go On, Express Yourself, Karen! + Icon: Attentive Face.]

Karen roars. [Distinct index: I Am Angry With You! Feel It!]

A: Yes.... Now you sound *furious*, I think. [Symbol-interpretation: You Are Angry + index: Go On, I Am Interested And I Am Not Afraid Of Your Anger.]

Karen whines again. [Resumes iconical and indexical signification to elicit analyst's response: Feel Sorry For Me! I Am Sad!]

A: Maybe there are *Two* darned people here! [Symbol-interpretation: You Two Are Angry + indexical communication: I Am Not Scared Of Your Anger.]

Mother: Mmm. [Symbol comment: I Agree + indexical comment: I Am Thinking About What's Happening Here.]

A: One mother mad with father ... [Symbol-interpretation + Index: I Am Reflecting.]

Karen frowns and roars distinctly. [Icon and index now match: Angry Face And Voice + I Want To Tell You Both I Am Angry.]

A: ... and one Karen mad with *me* and *Mom* because we talk so much. [Etc.] Karen cries angrily.

A: Is it in a situation like this that Karen wants the breast?

Mother: Yes, now it starts getting breast-time ...

Karen cries again.

A (to Karen): I think ... I think you are angry.

Karen cries more angrily.

Mother: Yes, now she is not sad, now she is angry!

A (to Karen): Shall we try to find that out; what are you angry with?

Mother interprets Karen's signs differently from the first vignette. Karen creates more unequivocal signs, for example when Mom and I speak, which entitles me to interpret her anger. Let us formulate her crying and breast-craving in semiotic terms. They are distorted iconical and indexical expressions of mainly anger. This distortion arises when her affects have lost contact with explicit memories of situations when they arose. Instead, affects tie to craving the breast. One part of her psyche expresses symptoms and storms with affects. Another part is a warded-off and affectively silent part where anger is blacked out. After this cleavage, symptom and personality are fixated and an infantile repression is established. The more it is established, the more Karen becomes deadlocked in monotonous whining and her mother in stereotyped interpretations of it ('she is sad').

Some questions begin to find their answers. 'How do you know that the infant understands what you say to her?' She understands it in a developing semiotic interaction with me and mother. 'What does she understand?' She understands me at increasingly complex sign levels, from icon through index to, with older children, symbols. 'How do you know that you two understand the same aspects of communication?' I judge it along my countertransference, which I compare to our present mode of semiotic interaction.

It now remains to account for Karen's cognitive capacities for understanding communication on different levels. How, and on what levels, would she understand when I say, 'I think you are angry'?

The infant's understanding of language—findings from developmental research

Developmental research techniques chart what the foetus and the newborn understand of language communication. During the last trimester, the foetus processes its mother's speech sounds and extracts 'invariant patterns across the complex auditory

input that is filtered through the amniotic fluid' (Karmiloff and Karmiloff-Smith, 2001, p. 43). It can differentiate between language and other sounds. At birth, it recognizes its mother's voice (p. 44) and prefers it to a stranger's (DeCasper and Fifer, 1980).

Recognition of mother's voice thus begins *in utero*. Recognition, however, is not the same as understanding; 'For the newborn ... the mother's voice is an acoustic stimulus which is familiar in some respects but is not yet associated with any other aspects of her identity in postnatal experience' (Fernald, 2004, p. 57). The infant recognizes prosodic and rhythmic patterns in mother's way of reading a story which has been presented before birth. She will prefer it to other women's readings (DeCasper and Spence, 1986). The newborn also uses prenatal impressions to differentiate her mother's language from that of another rhythmic class (Nazzi et al., 1998, p. 756).

The mother and others around help the infant to develop language competence by speaking 'motherese', in which 'stress patterns within words and sentences are exaggerated, as are intonation contours around phrases' (Karmiloff and Karmiloff-Smith, 2001, p. 47). It helps the infant 'to identify linguistic units in continuous speech' (Fernald, 2004, p. 58) and to associate it with pleasurable interaction.

'Between birth and two months infants process basic rhythmic characteristics of languages. From five months onward, they begin focusing on the specifics of their native tongue' (Karmiloff and Karmiloff-Smith, 2001, p. 46). This does not mean that a 5 month-old experiences speech units as language. They are rather felt as 'groups of sounds as yet independent of meaning and grammar' (p. 49). Some months later, a child like Karen can 'extract a word that recurs in a variety of sentence-contexts' (p. 51). As I repeat 'angry', Karen will gradually recognize its sound but she still doesn't understand its symbol import.

Not until the end of the first year do words begin to serve a 'referential function' (Fernald, 2004, p. 62). To understand this mechanism, the infant must realize that Mom's pointing finger refers to something else beyond. This is a prerequisite for understanding that a word refers to something else than what is immediately present. This ability sets in at around 12 months (Messer, 2004, p. 295).

The infant must develop yet another capacity in order to understand what words mean. Young infants link objects they see and hear only if they are presented simultaneously. Mothers intuitively 'use synchrony to teach their young infants new names for objects' (Bahrick, 2000, p. 132). Pointing at the spoon, mother says 'Spoon!' The young infant needs an object presented visually and aurally simultaneously. In Peircean terms, as long as the indexical sign and its object must be presented together, the baby cannot take the giant step of joining the object with the word symbol.

To sum up: a 1 year-old child understands that words refer to things and they do not have to be uttered when she sees them to convey their reference. She understands the meaning of some 10 words and maybe she has started pronouncing one or two. Thus, Karen who is only 8 months old confronts us with a highly legitimate question: why do I use words whose symbolical (Peirce), digital (Rosolato) or lexical (Norman) meaning she cannot understand? I do it because I attribute to Karen a

capacity to understand *emotional* communication. Findings from developmental psychological research support such a supposition.

The infant's understanding of emotions—findings from developmental research

The Still-Face experiment was developed by Tronick and co-workers (1978). If a mother playing with her child suddenly, at the researcher's request, keeps her face still, the effect is dramatic. The infant stops smiling and looking at her mother and becomes distressed. The Still-Face prevents mother and baby forming a 'Dyadic State of Consciousness' (Tronick, 2005). The mutual exchange and creation of meaning is interrupted. Instead, these infants 'engage in self-organized regulatory behaviours to maintain their coherence and complexity, to avoid the dissipation of their State of Consciousness' (2005, p. 303).⁷

Muir and co-workers (2005) have refined observation methods in the Still-Face. They registered not only the infant's gaze at or away from her mother, but also her emotional reactions. By measuring gaze direction and infant smiling to mother's face shifting from a happy to a sad expression, 'D'Entremont [1995] was able to show that infants can discriminate between multiple exemplars of an adult's happy versus sad facial emotional expressions when a smiling index is used, several months earlier than visual attention measures indicate' (Muir et al., 2005, p. 216). Infants of 3 months stop smiling, 'revealing the infant's sensitivity to a change from happy to sad emotional expressions' (p. 214). These young infants can 'read' and sort different facial emotional expressions. At 8 months, Karen is already an expert reader of the emotions expressed in mine and mother's faces. Her problem is not that her mother's face is still, but that she cannot fuse what Mom conveys consciously and unconsciously or, put in another framework, what her diverging sign types mean.

Concerning auditory communication, the adult's voice 'operates primarily to maintain infant visual attention, although on its own the voice can elicit some positive affect when facial expressions become hard to decipher' (Muir et al., 2005, p. 224). To create such hard-to-decipher situations, the voice of a televised adult was replaced by a synthesized voice with another emotional meaning. The results showed that infants can show signs of distress when confronted with a message in which what they see and hear do not match. In other experiments, however, infants are captured by the sight of the happy face, ignore the discrepant sad voice and remain calm. Karen seems to belong to the first group. She registers those shifts in her mother's voice that I experienced as insincere, when her wording and its affect did not match. On the other hand, this sensitivity of Karen's made her attentive when I expressed myself in an easy-to-decipher and sincere way, that is, when the wording and sound of my voice coincided with my visual appearance. I will soon return to this point.

A state of consciousness (SOC) is 'a psychobiological state with a distinct complex organization of body, brain, behaviour, and experience. It is a distinct assemblage of implicit and explicit meanings, intentions and procedures.... SOCs are purposive, and organize internal and external actions towards some end' (Tronick, 2005, p. 295). 'At some point in development, SOCs assemble meanings from psychodynamic processes including a psycho-dynamic unconscious' (p. 297).

Evidence for infant sensitivity to auditory communication also comes from experiments by the musicologist Stephen Malloch. The elements of mother—infant interaction combine into a 'communicative musicality' (1999, p. 31), which Malloch investigates spectrometrically. Analyses of 'conversations' show that mother and an infant who is a few months old spontaneously find a common pulse. Mom's 'Come on!' or 'That's clever!' are taken up by the baby's cooing in an underlying shared rhythm. The mother spontaneously adjusts to infant pitch changes and her timbre changes so that messages with different meanings will sound different. When the mother is depressed, this communicative musicality is disrupted (Robb, 1999).

These experiments show that infants understand emotional visual and auditory preverbal communication better than they understand words. Clinically, their sensitivity implies that if my iconical and indexical expressions do not concord with my symbolic expression, the infant cannot understand me emotionally. Concordance comes about when 'the analyst's tone of voice and her gestures and the lexical meaning of the words express the same meaning' (Norman, 2001, p. 96). When I speak with Karen, the word-symbol content is irrelevant in the sense that she doesn't understand it. But it is most relevant in the sense that it concords with my emotional iconical and indexical expressions. When my expressions are fused, when I look like and sound like the words I tell her, I am sincere. This helps her to release herself from her mother's discordant communication. This is why I do not use 'motherese' with Karen. I use a plain and simple language, and I do not season it with any childish intonation.

For the analyst, there are many stumbling-blocks preventing sincere expressions. If I fear that Karen or mother can't stand any mention of anger, I will probably show this iconically even if I am silent. If I speak to mother along her logical interpretant that Karen is sad, while ignoring my emotional or energetic interpretants of her anger, I will be insincere too. If I look encouraging but feel sad about their communication, I will repeat the 'happy-face-sad-voice-experiment'. To be sincere, one must continuously examine the countertransference.

Communication and therapeutic action

The two summarizing questions were: 'Does the infant really understand what you convey to her and do you understand what she conveys to you?' I hope to have clarified my reasons and provisos when I answer both questions in the affirmative. Karen understands my communication on the iconical and indexical levels that accompany my verbal interpretations. She is affected by my attentive efforts to understand her and to express sincerely what I think goes on in her. I understand her on the basis of my countertransference and have qualified that position by sorting out my tools for understanding her. I have also accounted for infants' perceptual and cognitive tools for understanding linguistic and emotional communication.

Sometimes I am asked if this method works, not because of my interpretations but because the mother listens to my dialogue with her infant and identifies with me. Clearly, Karen's mother's pensive position and growing resistance to panic when Karen cries prove that she has identified with me. I think her identification wells forth from double sources. She is a first-hand witness when I work with Karen as the

primary channel for therapeutic change. Moreover, I also interpret their interaction. Her identification with me will thus be based on her witnessing the girl's inner struggle unfolding with me, and her understanding of how she herself contributes to their emotional climate. This will give her experiences an under-the-skin quality, which promotes her identification. I will soon show this.

Another question sometimes asked is whether the infant changes because of normal development or because of interpretive work. The question is impossible to answer with certainty, but two arguments support that the infant needs interpretive work to catch up with normal development. The mothers bring their infants to us because normal development has stagnated. The infants seem helpless and immature, as if their psyche tries to delay repressions from settling. Why should development suddenly resume its normal course, as if unaffected by analytic work? Second, Karen had been crying and craving almost all her life of 8 months. This changed radically during treatment. To explain this as solely due to normal development demands an account of what processes should have such powers to clear up alarming symptoms.

Does Karen really understand what I convey to her? Consider the following final snapshot. Karen arrives at the 12th session newly awakened and a bit hungry. She is a little cross but keeps herself together. She looks at me earnestly and I wait. Unexpectedly, she crawls to a cupboard and reaches for a door knob. She knocks at it and moves her hand to her mouth, as if drinking. She gives a laugh, which mother meets. Mother says to Karen 'You're having a drink at the milk-bar, aren't you!' Karen's play shows she has integrated my interpretations of her anger with Mom's breast and her fears about it. Mother's pun 'milk-bar' shows she is not ensnared by Karen's demands. It is also a sign of her identification with me, since I sometimes use such playful language.

'Talk to me baby, tell me what's the matter now.' Or: 'Signify to me baby, and I will translate your icons and indices into more comprehensible signs and convey them to you. Your protolinguistic representations of emotions will form a narrative which we will explore together. Our dialogue becomes a dance, the presentational symbolism of which we will interpret.' The latter formulation better describes communication in infant psychoanalytic work. On the other hand, it would certainly make a lousy blues title. But that's another story.

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Translations of summary

"Sprich zu mir, Baby, sag mir, was los ist": semiotische und entwicklungspsychologische Perspektiven auf die Kommunikation in der psychoanalytischen Säuglingsbehandlung. Säuglinge leiden zu erheblichem Grad unter Störungen der Ernährung, des Schlafes, der Stimmung und der Bindung. Um

ihnen zu helfen, werden zunehmend psychoanalytische Methoden benutzt. Fallberichten zufolge erzielt die psychoanalytische Arbeit mit Säuglingen und Müttern, und zwar häufig überraschend schnell, tief reichende Resultate, sowohl was die Symptombesserung anlangt als auch die Verbesserung der Beziehung zwischen Mutter und Kind. Die klinische Dringlichkeit der Methode lässt es wichtig erscheinen, ihre Resultate und theoretischen Grundlagen zu untersuchen. Unter den in Diskussionen über diese modifizierte Form der Psychoanalyse häufig gestellten Fragen dominieren solche, die sich auf die Art der Kommunikation zwischen dem Analytiker, dem Baby und der Mutter beziehen. Wie und was versteht das Baby beispielsweise, wenn der Analytiker ihm eine Deutung gibt? Was versteht der Analytiker, wenn der Säugling zu ihm spricht? Diese Fragen werden durch die Untersuchung der Instrumente erforscht, die dem Säugling zum Verstehen sprachlicher und emotionaler Kommunikation zur Verfügung stehen, und durch die Schaffung eines semiotischen Rahmens für die Beschreibung der Kommunikation zwischen den drei Beteiligten im analytischen Setting. Der Beitrag untersucht auch Probleme, die mit den traditionellen Verwendungsweisen des Konzepts der Symbolisierung in der psychoanalytischen Theorie zusammenhängen. Die theoretische Untersuchung wird durch zwei kurze Vignetten aus der psychoanalytischen Arbeit mit einem 8 Monate alten Mädchen und seiner Mutter illustriert.

"Háblame bebé, dime qué te ocurre': la perspectiva semiótica y evolutiva sobre la comunicación en el tratamiento psicoanalítico con bebés. Los bebés sufren de manera considerable trastornos en la lactancia, el sueño, el humor y el apego. Cada vez más se usan métodos psicoterapéuticos para ayudarlos. En base al estudio de algunos materiales clínicos, el trabajo psicoanalítico con bebés y madres ha demostrado un profundo alcance y a menudo resultados sorprendentemente rápidos, tanto en la reducción de síntomas como en la mejoría de las relaciones entre madre e hijo. Es importante ante la urgencia clínica del método que se estudien sus resultados y sus planteamientos teóricos. Entre las cuestiones teóricas que surgen a menudo en las discusiones sobre esta forma modificada de psicoanálisis, una de las más frecuentes es la naturaleza de la comunicación entre analista, bebé y madre. Por ejemplo, ¿cómo y qué entiende el bebé cuando el analista le interpreta?, ¿qué es lo que entiende el analista de la comunicación del bebé? Estos temas son abordados mediante la investigación de las herramientas de las que dispone el bebé para comprender la comunicación lingüística y emocional, y la aportación de un marco semiótico para describir la comunicación entre los tres participantes en el encuadre analítico. El trabajo también investiga problemas relacionados con la manera tradicional de usar el concepto de simbolización dentro de la teoría psicoanalítica. Dos breves viñetas de un trabajo psicoanalítico con una niña de ocho meses de edad y su madre ilustran la investigación teórica.

« Parle-moi mon bébé, dis-moi ce qui se passe » : perspectives sémiotiques et développementales sur la communication dans le traitement psychanalytique du très jeune enfant. Les très jeunes enfants présentent souvent des troubles au niveau des soins primaires, du sommeil, de l'humeur et de l'attachement. Les méthodes psychothérapiques sont utilisées de plus en plus pour les aider. D'après différents rapports de cas, le travail psychanalytique avec de très jeunes enfants et leurs mères a apporté des résultats profonds et souvent d'une rapidité surprenante, aussi bien au niveau de la réduction des symptômes qu'à celui de l'amélioration des relations mère – enfant. Il est important, devant l'urgence clinique de la méthode, que l'on étudie ses résultats et des présupposés théoriques. Parmi les aspects théoriques qui apparaissent lors de discussions à propos de cette forme modifiée de psychanalyse, les plus fréquents interpellent la nature de la communication entre analyste, bébé et la mère. Par exemple, qu'est-ce qu'un très jeune enfant comprend, et comment, lorsque l'analyste interprète à la mère ? Qu'est-ce que l'analyste comprend de la communication de l'enfant ? Ces aspects sont étudiés en investigant les outils dont dispose l'enfant pour comprendre la communication linguistique et émotionnelle, et en proposant un cadre sémiotique pour décrire la communication entre les trois participants de la situation analytique. L'article s'interroge également sur des questions en rapport avec les approches traditionnelles utilisés par la théorie psychanalytique pour aborder le concept de symbolisation. L'investigation théorique est illustrée par deux brèves vignettes cliniques issues du travail psychanalytique avec une fillette de huit mois et sa mère.

"Parla con me bambino, dimmi cosa c'è che non va": Semiotica e prospettive di sviluppo della comunicazione nella psicoterapia infantile. I bambini soffrono in modo considerevole per difficoltà relative all'allattamento, al sonno, all'umore e all'attaccamento. Come risulta dallo studio dei casi, il lavoro psicoanalitico con i bambini e le madri ha prodotto profondi benefici, talvolta in tempi sorprendentemente brevi, sia per quanto concerne la riduzione del sintomo che il miglioramento del rapporto madre-figlio. L'urgenza clinica di questi problemi rende importante l'analisi dei presupposti teorici e dei risultati prodotti. Fra le questioni teoriche sollevate da questa forma di psicoanalisi modificata, quelle che riguardano la natura della comunicazione fra analista, madre e bambino sono le più frequenti. Ad esempio: cosa comprende un

bambino quando l'analista interpreta? Cosa comprende l'analista della comunicazione del bambino? Si cerca di rispondere a queste domande mediante la ricerca sugli strumenti di comprensione linguistica e di comunicazione emozionale del bambino e fornendo una struttura semiotica che descriva la comunicazione fra i tre partecipanti alla seduta psicoanalitica. Il lavoro affronta anche i problemi relativi al metodo tradizionale di usare il concetto di simbolizzazione nella teoria psicoanalitica. La ricerca teorica è illustrata da due estratti di un lavoro psicoanalitico con una bambina di otto mesi e sua madre.

References

- Anzieu D, editor (1989). *Psychanalyse et language. Du corps à la parole* [Psychoanalysis and language. From the body to the word]. Paris: Dunod. 232 p.
- Arfouilloux J-C (2000). Guy Rosolato. Paris: PUF. 128 p.
- Bahrick L (2000). Increasing specificity in the development of intermodal perception. In: Muir D, Slater A, editors. *Infant development: Essential readings*, p. 119–36. London: Blackwell.
- Balkányi C (1964). On verbalization. Int J Psychoanal 45:64–74.
- Baradon T (2002). Psychotherapeutic work with infants—Psychoanalytic and attachment perspectives. *Attach Hum Dev* **4**:25–38.
- Baradon T, Broughton C, Gibbs I, James J, Joyce A, Woodhead J (2005). *The practice of psychoanalytic parent-infant psychotherapy—Claiming the baby.* London: Routledge. 215 p.
- Barrows P (2003). Change in parent–infant psychotherapy. J Child Psychother 29:283–300.
- Bear M, Connors B, Paradiso M (2001). *Neuroscience: Exploring the brain*. Baltimore, MD: Lippincott William & Wilkins. 855 p.
- Berlin N (2002). Parent–child therapy and maternal projections: tripartite psychotherapy—a new look. *Am J Orthopsychiatry* **72**:204–16.
- Beebe B, Lachmann F (2002). *Infant research and adult treatment: Co-constructing interactions*. Hillsdale, NJ: Analytic Press. 272 p.
- Bion W (1962). Learning from experience. London: Karnac. 112 p.
- Bruner J (1990). Acts of meaning: Four lectures on mind and culture. Cambridge, MA: Harvard UP. 181p.
- Cramer B, Palacio Espasa F (1993). *La pratique des psychothérapies mères-bébés. Études cliniques et techniques* [The praxis of the mother–infant psychotherapies. Clinical and technical studies]. Paris: PUF. 391 p.
- DeCasper AJ, Fifer WP (1980). Of human bonding: Newborns prefer their mothers' voices. *Science* 6 June; **208**:1174–6.
- DeCasper AJ, Spence M (1986). Prenatal maternal speech influences newborns' perception of speech sounds. *Infant Behav Dev* **9**:133–50.
- D'Entremont B (1995). One- to six-months-olds' attention and affective responding to adults' happy and sad expressions: The role of face and voice. Unpublished doctoral dissertation, Queen's U, Kingston, Ontario.
- Dolto F (1982). Séminaires de psychanalyse d'enfant [Seminars on child analysis.], Vol. 1. Paris: Seuil. 238 p.
- Dolto F (1985). Séminaires de psychanalyse d'enfant [Seminars on child analysis.], Vol. 2. Paris: Seuil.
- Dolto F (1994). Les étapes majeures de l'enfance [The major stages of childhood.]. Paris: Gallimard. 399 p.
- Eco U (1971) Den frånvarande strukturen [1968] [The absent structure]. Lund: Cavefors.
- Fernald A (2004). Hearing, listening and understanding: Auditory development in infancy. In: Bremner JG, Fogel A, editors. *Blackwell handbook of infant development*, p. 35–70. London: Blackwell.
- Field T, Healy B, Goldstein S, Perry S, Bendell D, Schanberg S, et al. (1988). Infants of depressed mothers show 'depressed' behavior even with non-depressed adults. *Child Dev* **59**:1569–79.
- Fraiberg S (1987). Selected writings of Selma Fraiberg, Fraiberg L, editor. Columbus: Ohio State UP. 688 p.

- Gibello B (1989). Fantasme, langage, nature, trois ordres de réalité [Fantasy, language, nature, three orders of reality]. In: Anzieu D, editor. *Psychanalyse et langage* [Psychoanalysis and language], p. 25–70. Paris: Dunod.
- Jones E (1916). The theory of symbolism. In: *Papers on psycho-analysis*, 5th edition, p. 87–144. London: Baillière, Tindall & Cox, 1948.
- Karmiloff K, Karmiloff-Smith A (2001). Pathways to language. Cambridge, MA: Harvard UP. 256 p.
- Klein M (1924). The role of the school in libidinal development. Int J Psychoanal 5:312–31.
- Klein M (1930). The importance of symbol-formation in the development of the ego. *Int J Psychoanal* **11**:24–39.
- Klein M (1931). A contribution to the theory of intellectual inhibition. *Int J Psychoanal* **12**:206–18. Lacan J (1966). *Écrits*, Vol. 1. Paris: Seuil, 1999. [(2005). *Écrits*, Fink B, translator. New York, NY: Norton. 878 p.]
- Lacan J (1975). Encore: Séminaires [On feminine sexuality, the limits of love and knowledge: The Seminar of Jacques Lacan, Book XX, Encore], Vol. 20. Paris: Seuil.
- Laplanche J, Pontalis JB (1973). *The language of psychoanalysis* [1967], Nicholson-Smith D, translator. London: Hogarth. 510 p. (*International Psycho-analytical Library*, No 94.)
- Langer S (1942). Philosophy in a new key: A study in the symbolism of reason, rite and art. Cambridge, MA: Harvard UP. 313 p.
- Langer S (1972). *Mind: An essay on human feeling*, vol. 2. Baltimore, MD: Johns Hopkins UP. 399 p.
- Lebovici S, Stoléru S (2003). *Le nourisson, sa mère et le psychanalyste* [The infant, the mother and the psychoanalyst]. Paris: Bayard. 375 p.
- Lieberman A, Silverman R, Pawl J (2000). Infant–parent psychotherapy: Core concepts and current approaches. In: Zeanah C, editor. *Handbook of infant mental health*, 2nd edn, p. 472–84. New York, NY: Guilford.
- Malloch S (1999). Mothers and infants and communicative musicality. *Musicae Scientiae*, special issue, 29–58.
- Manzano, J, Palacio Espasa, F, Zilkha, N (1999) Les scénarios narcissiques de la parentalité. Clinique de la consultation thérapeutique. Paris: PUF. 174 p. (Le Fil Rouge series.)
- Messer D (2004). Processes of early communication. In: Bremner JG, Slater A, editors. *Theories of infant development*, p. 284–316. Oxford: Blackwell.
- Muir D, Lee K, Hains C, Hains S (2005). Infant perception and production of emotions during face-to-face interactions with live and 'virtual' adults. In: Nadel J, Muir D, editors. *Emotional development*, p. 207–34. Oxford: Oxford UP.
- Muller J (1996). Beyond the psychoanalytic dyad. London: Routledge. 230 p.
- Nazzi T, Bertoncini J, Mehler J (1998). Language discrimination by newborns: Towards an understanding of the role of rhythm. *J Exp Psychol Hum Percept Perf* **24**:756–66.
- Norman J (2001). The psychoanalyst and the baby: A new look at work with infants. *Int J Psychoanal* **82**:83–100.
- Norman J (2004). Transformations of early experiences. Int J Psychoanal 85:1103–22.
- Peirce CS (1992). *The essential Peirce*, Vol. 1: *1867–1893*. Kloesel C, Houser N, editors. Bloomington, IN: Indiana UP. 399 p.
- Peirce CS (1998). *The essential Peirce*, Vol. 2: *1893–1913*. Houser N, editor. Bloomington, IN: Indiana UP. 584 p.
- Robb L (1999). Emotional musicality in mother–infant vocal affect and an acoustic study of postnatal depression. *Musicae Scientiae*, special issue, 123–54.
- Rosolato G (1978). Symbol formation. Int J Psychoanal 59:303–13.
- Rosolato G (1985). Éléments de l'interprétation [Elements of interpretation]. Paris: Gallimard. 338 p.
- Segal H (1957). Notes on symbol formation. Int J Psychoanal 38:391–7.
- Segal H (1991). *Dream, phantasy and art.* London: Routledge. (*New Library of Psychoanalysis*, Vol. 12.) 120 p.
- Sheriff J (1994). Charles Peirce's guess at the riddle: Grounds for human significance. Bloomington, IN: Indiana UP.

- Silver A (1981). A psychosemiotic model: An interdisciplinary search for a common structural basis for psychoanalysis, symbol-formation, and the semiotic of Charles S. Peirce. In: Grotstein JS, editor. *Do I dare disturb the universe? A memorial to W. R. Bion*, p. 270–315. London: Karnac.
- Stern D (1985). The interpersonal world of the infant: A view from psychoanalysis and developmental psychology. New York, NY: Basic Books. 304 p.
- Stern D (1998). The motherhood constellation—A unified view of parent–infant psychotherapy. London: Karnac. 229 p.
- Trevarthen C, Aitken K (2001). Infant intersubjectivity: Research, theory and clinical applications. *J Child Psychol Psychiatry* 42:3–48.
- Tronick E (2005). Why is connection with others so critical? The formation of dyadic states of consciousness and the expansion of individuals' states of consciousness: Coherence governed selection and the co-creation of meaning out of messy meaning making. In: Nadel J, Muir D, editors. *Emotional development*, p. 293–315 Oxford: Oxford UP.
- Tronick E, Weinberg K (1997). Depressed mothers and infants: Failure to form dyadic states of consciousness. In: Murray L, Cooper P, editors. *Postpartum depression and child development*, p. 54–82. New York, NY: Guilford.
- Tronick E, Als H, Adamson L, Wise S, Brazelton B (1978). The infant's response to entrapment between contradictory messages in face-to-face interaction. *J Am Acad Child Psychiatry* **17**:1–13.
- Watillon A (1993). The dynamics of psychoanalytic therapies of the early parent–child relationship. *Int J Psychoanal* **74**:1037–48.
- Winnicott DW (1941). The observation of infants in a set situation. Int J Psychoanal 22:229-49.
- Winnicott DW (1960). The theory of the parent-infant relationship. Int J Psychoanal 41:585-95